Space Weather Forecast

Issued on Monday, 05 August 2024 at 01:25 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

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Space Weather Forecast Headline: M-class flares (Minor-Moderate radio blackouts) throughout. Chance of Minor Geomagnetic Storm, mainly Day 1.

Analysis of Space Weather Activity over past 24 hours

Solar Activity: Solar activity is Moderate. A peak impulsive Moderate-class flare was observed at 04/1515UTC from a newly emerging sunspot region in the southeast quadrant. An active disc, with thirteen sunspot regions currently visible. A number of these are magnetically complex, though largely benign in terms of flare activity at the moment. The weak shock from a Coronal Mass Ejection (CME) originating from AR3768 at 01/0709UTC may have arrived early on Day 1 (04 Aug), and there is evidence of one or two further CME arrivals, mostly weak, affecting Earth through the past 24 hours.

Solar Wind / Geomagnetic Activity: The solar wind has been at Slow to slightly elevated levels peaking at 420 km/s at 04/2132 UTC. The Interplanetary Magnetic Field was at Moderate to Strong levels with the north-south component becoming Moderate to Strong with the southward orientation becoming most enhanced from 04/0600-1600UTC. Geomagnetic activity was Quiet to Active until 04/1200-1800UTC when geomagnetic activity became Moderate to Strong for a time.

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) remained at background levels.

Four-Day Space Weather Forecast Summary

Solar Activity: Moderate to High solar activity is forecast to continue, with occasional Moderate class flares expected and a chance of isolated Strong flares.

Solar Wind /Geomagnetic Activity: Solar winds are likely to continue at mostly Slow levels throughout, in the absence of any high speed streams (HSS) affecting Earth. Geomagnetic activity is likely to be generally Quiet to Unsettled, with Active to Minor Storms possible, more especially at first on Day 1 (5 Aug).

Energetic Particles / Solar Radiation: Solar radiation is currently at background levels, with little change most likely through the guidance period.

Issued by Met Office Space Weather Advisor, Tel: +44 (0) 330 135 4254 Email: moswoc@metoffice.gov.uk

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Geomagnetic Storms:

Geo-Magnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	Yes	20	10	10	10
Strong	G3	Yes	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 M Class	Yes	80	70	70	70
Very Active	R3 to R5 X	No	20	20	20	20

Solar Radiation Storms - (High Energy Protons):

Radiation Storms Probability (Exceedance)	Level (cm^{-2} sr^{-1} s^{-1})	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	≥ S1	No	20	20	20	20
Very Active	≥ S3 *	No	0	0	5	5

* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)

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